

Worksheet: “Build a Molecule”

Name: _____

Background:

- Describe the differences between an atom and a molecule.

- All chemicals have names. There are lots of rules involved with naming a chemical. You will not be required to learn how to name chemicals in this class, however, in this lab, if you build a “molecule” and the software does not name it, then that molecule is NOT correct. The software only names molecules that actually exist.

By the end of this lab you should be able to:

- *Construct simple molecules from atoms.*
- *Write rules for how atoms are arranged given formulas for some common molecules*
- *Draw, name, and write formulas for some common molecules.*

Directions:

1. Check with your partner to make sure that you understand the “background” material above. You may need to use [*Build a Molecule*](#) to help you check your knowledge.
2. Use [*Build a Molecule*](#) to practice constructing molecules and then write rules that you can use to construct common molecules given the formula.
 - a. List some “rules” that you have discovered about chemical formulas.

 - b. List some “rules” that you have discovered about chemical names

 - c. List some “rules” that you have discovered about how atoms arrange themselves.

3. Draw pictures of the following molecules (Use “Build a Molecule” if you need help):

a. Water

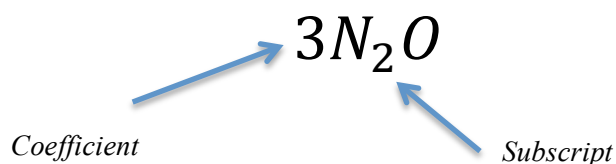
d. NH_3 (ammonia)

b. Carbon dioxide

e. CH_3COOH (acetic acid or vinegar)

c. Oxygen molecule

4. Describe what the subscripts and coefficients indicate in chemistry notation.



5. Look at the “3D” version (Ball and Stick) of the molecules that you have made that include carbon. How many bonds (shown as “sticks”) attach themselves around the outside of a carbon atom?